



**GROWING AREA WQ
Damariscotta River
Boothbay, Edgecomb, Newcastle and Damariscotta
ANNUAL REVIEW for 2008**

Report Date: 10/7/09

Anna Bourakovsky

APPROVAL

Division Director:

_____ Date: _____
Print name signature

DISTRIBUTION:

- () Habitat/Aquaculture Division..... By: _____ Date: _____
- () Bureau of Resource Management Director..... By: _____ Date: _____
- () Office of the Commissioner..... By: _____ Date: _____



DRAFT APPROVAL ROUTING FORM

Date in Process:

Operation Title:

Revision No.:

Originator's Name: Anna Bourakovsky _____
Print name Signature



The attached draft is for your evaluation and comment. Suggested changes should be concise and reasons specific. Return to sender.

peer reviewer:

Fran Pierce _____ Date: _____
print name signature

peer reviewer:

Amy Fitzpatrick _____ Date: _____
print name signature



Table of Contents

Executive Summary.....	5
Growing Area Description.....	5
Current Classifications.....	5
Activity during Review Period	6
Current Management Plan for Conditional Area.....	6
Current Annual Review of Management Plan for Conditional Area	6
Water Quality Review and Discussion	7
Shoreline Survey Activity	11
Aquaculture/Wet Storage Activity.....	11
Classification Changes Required.....	11
Summary	11
Appendix A. Annual Review of Conditional Area Management Plan	12
Appendix B. Key to water quality table headers	13
Appendix C. 2008 Water Quality Data	14

List of Tables

Table 1. Growing Area WQ Geomean and P90 Calculations, 2004-2008	7
Table 2. Growing Area WQ Geomean and P90 Calculations, Conditional Area Open Status	8
Table 3. Sample Collection Counts for 2008 Review Year	8

List of Figures

Figure 1. Growing Area WQ with Active Sampling Stations	4
Figure 2. Water Quality as Percent of Approved Standard, Approved Stations	10
Figure 3. Water Quality as Percent of Approved Standard, Conditionally Approved Stations	10



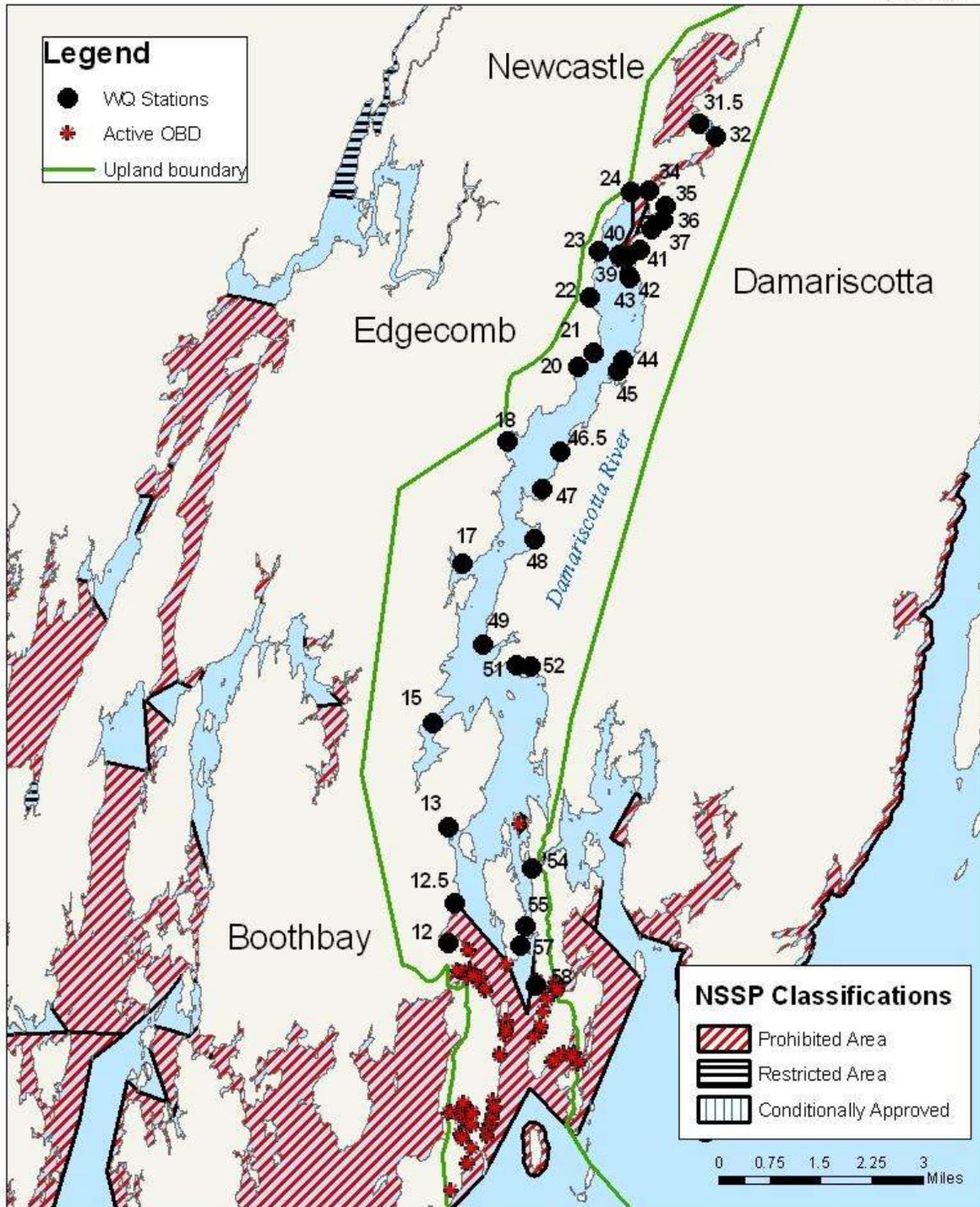
Figure 1. Growing Area WQ with Active Sampling Stations



Maine Department of Marine Resources Growing Area WQ - Damariscotta River



07/23/09





Executive Summary

This is an annual report for growing area WQ, the Damariscotta River, written in compliance with the requirements of the 2007 Model Ordinance of the National Shellfish Sanitation program.

Growing Area WQ has had no significant changes in pollution sources during the review period. Existing pollution sources include two municipal waste water treatment plants, two marinas, six boatyards and licensed over board discharges. In 2008, there were 87 active over board discharges (OBDs) in area WQ; no OBDs were removed during the review period.

In 2008, no sampling stations were added or removed in growing area WQ and no classification changes occurred. The classification for station WQ 31.5 was changed from prohibited to conditionally approved, in order to correctly reflect its classification. Overall, there has been no notable change in the water quality in area WQ during the review period, and no classification changes are required at this time.

The next triennial report for growing area WQ is due after 2009; the next sanitary survey report is due after 2014.

Growing Area Description

Growing Area WQ is the Damariscotta River estuary, located in Lincoln County along the midcoast region of Maine (Figure 1). The growing area boundary begins at Linnekin Neck, East Boothbay; includes the Gut, South Bristol and ends at the southeast tip of Rutherford Island, South Bristol (including Turnip and Thrumcap Islands). A description of the upland boundary can be found in the central files of the Department of Marine Resources in West Boothbay Harbor. The river flows through the following towns: Nobleboro, Damariscotta, Newcastle, South Bristol, Edgecomb, Bristol and Boothbay. The growing area's head of tide is located below the outlet of Damariscotta Lake on the town line between Newcastle and Nobleboro and the river empties into the Atlantic Ocean 15 miles south of the two towns.

Current Classifications

Shellfish growing area WQ currently has areas classified as:

Approved:

- Middle Damariscotta River; 21 sample stations

Conditionally Approved

- Area 23-A, Area between the Narrows and US Route 1 (Newcastle, Damariscotta), due to Great Salt Bay Sewage Treatment Plant 2 stations: WQ 31.5 and 32.

Restricted

- Area 23-A, Days Cove, (Damariscotta); WQ 35, 36 and 37; due to non-point pollution
- Area 23-A, Huston Cove, (Damariscotta); WQ 40, 41 and 42; due to non-point pollution



Prohibited

- Area 23-A, Damariscotta River south of Route 1 bridge (Newcastle, Damariscotta); WQ 24 and 39; due to presence of waste water treatment plant outfall.
- Area 23-C, Farmers Island, (South Bristol), due to OBD; no sample stations
- Area 23-C, Lower Damariscotta River (Boothbay and South Bristol); due to the presence of OBDs, marinas and non-point source pollution: WQ 12, 12.5 and 58

For a complete list of Legal Notices, please visit Maine DMR website:

http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm#Q

Activity during Review Period

June 11, 2008- A fire destroyed Washburn and Doughty in East Boothbay; Seth Barker, DMR Oil Spill Response Coordinator responded to assess the impact. The in-field assessment determined that due to petroleum sheen on the water a section of the river (Jones Cove, Area 23C) in South Bristol needed to be closed until further assessment and product testing could be conducted. Shellfish samples (clams and mussels) were collected on August 8 and sensory tested. All came back acceptable and the closure was repealed on August 12, 2008.

There were no classification changes in growing area WQ in 2008.

Current Management Plan for Conditional Area

There is one conditional area located in growing area WQ.

Pollution Area 23-A: Damariscotta River Conditional Area; due to Great Salt Bay Sewage Treatment Plant; Stations WQ 31.5 and 32.

A copy of the management plan for this conditional area can be found in DMR central files; this plan was last updated on August 26, 2008.

Current Annual Review of Management Plan for Conditional Area

There were no conditional area closures due to a sewage treatment plant malfunction during the 2008 review year. Station WQ 31.5 was sampled monthly; station WQ 32 was scheduled to be sampled monthly; however, the April 2008 sample was missed due to access issues (construction work on bridge, no access to sampling site). This station was sampled twice in May, for a total of 12 annual samples. For a complete review, please see appendix A.



Water Quality Review and Discussion

Table 1 lists all active approved, restricted and prohibited stations in Growing Area WQ, with their respective geometric mean and P90 calculations for 2008; table 2 lists the conditionally approved stations in area WQ, with their respective geometric mean and P90 scores in the open status only. Please refer to Appendix B for a key to interpreting the headers on the columns of Table 1. The approved and restricted standards for each station are also displayed in Table 1. These standards will fluctuate yearly as a result of the DMR transition from a most probable number (MPN) fecal coliform test method to a membrane filtration (MF) method and are dependent on the number of samples analyzed by MPN verses MF. The total number of data points used in the calculations is displayed in the Count column and includes both MPN and MF values. The number of data points analyzed by MF is displayed in the MFCNT column. This fluctuating standard will cease when all 30 data points have been analyzed by the MF method.

In 2008, all active stations continued to meet the NSSP classification criteria currently assigned to them. No classification changes are required at this time.

Table 1. Growing Area WQ Geomean and P90 Calculations, 2004-2008

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WQ012.00	P	30	16	6.4	0.78	1200	63.6	38	217
WQ012.50	P	30	15	3.3	0.36	27	9.7	39	221
WQ013.00	A	30	15	5.6	0.55	460	28.0	39	221
WQ015.00	A	30	15	5.1	0.58	460	28.0	39	221
WQ017.00	A	30	15	4.4	0.56	460	23.4	39	221
WQ018.00	A	30	16	2.8	0.31	43	7.0	38	217
WQ020.00	A	30	16	2.6	0.17	9.1	4.3	38	217
WQ021.00	A	30	16	2.7	0.20	9.1	4.9	38	217
WQ022.00	A	30	16	3.4	0.27	15	7.4	38	217
WQ023.00	A	30	16	4.4	0.41	38	14.8	38	217
WQ024.00	A	30	16	4.7	0.43	43	16.8	38	217
WQ034.00	P	30	15	9.2	0.56	240	48.0	39	221
WQ035.00	R	30	16	8.1	0.58	140	45.1	38	217
WQ036.00	R	30	16	10.4	0.74	1200	90.8	38	217
WQ037.00	R	30	16	7.9	0.72	1100	66.1	38	217
WQ039.00	P	30	15	3.7	0.32	23	9.4	39	221
WQ040.00	R	30	17	5.7	0.67	1200	41.4	38	212
WQ041.00	R	30	16	5.6	0.40	43	18.0	38	217
WQ042.00	R	30	15	3.5	0.43	240	12.4	39	221
WQ043.00	A	30	15	2.7	0.27	43	6.0	39	221
WQ044.00	A	30	15	3.8	0.35	43	10.5	39	221
WQ045.00	A	30	15	2.8	0.26	23	6.2	39	221
WQ046.50	A	30	15	2.9	0.30	68	7.0	39	221
WQ047.00	A	30	15	3.1	0.31	36	7.7	39	221
WQ048.00	A	30	15	2.7	0.18	12	4.6	39	221
WQ049.00	A	30	15	2.6	0.17	9.1	4.3	39	221



STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WQ051.00	A	30	15	2.5	0.12	4	3.6	39	221
WQ052.00	A	30	15	5.7	0.56	150	29.7	39	221
WQ054.00	A	30	15	2.9	0.28	55	6.7	39	221
WQ055.00	A	30	15	3.1	0.42	240	10.4	39	221
WQ057.00	A	30	14	3.0	0.35	160	8.4	40	226
WQ058.00	P	30	15	2.6	0.16	9.1	4.1	39	221

Table 2. Growing Area WQ Geomean and P90 Calculations, Conditional Area Open Status

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WQ031.50	CA	30	23	3.4	0.34	23	9.0	34	188
WQ032.00	CA	30	23	4.8	0.42	43	16.5	34	188

All active stations in approved and restricted areas were sampled 6 times in 2008, following the systematic random sampling (SRS) standard, with the exception of station WQ 57. Station WQ 57 was scheduled to be sampled 6 times, however, one sample (March 4, 2008) was not able to be collected due to ice. All stations classified as prohibited were also sampled at least 6 times throughout the review year. Additional samples were collected for selected flood stations under adverse pollution conditions, and the fecal coliform scores obtained under these conditions were not used for calculating the station's P90 scores. Table 3 shows the number of samples taken during the 2008 sampling year; appendix C shows all SRS data collected in 2008 for all active stations.

Table 3. Sample Collection Counts for 2008 Review Year

Station	Class	Adverse Closed	Random		Total	Comments
			Closed	Open		
WQ012.00	P		6		6	
WQ012.50	P		6		6	
WQ013.00	A			6	6	
WQ015.00	A			6	6	
WQ017.00	A			6	6	
WQ018.00	A	6		6	12	
WQ020.00	A			6	6	
WQ021.00	A			6	6	
WQ022.00	A			6	6	
WQ023.00	A	6		6	12	Current Flood Station
WQ024.00	A			6	6	
WQ031.50	CA			1	1	Classification changed to accurately reflect station location
	P		11		11	
WQ032.00	CA			12	12	
WQ034.00	P	6	6		12	
WQ035.00	R			6	6	
WQ036.00	R			6	6	
WQ037.00	R			6	6	
WQ039.00	P		6		6	
WQ040.00	R			6	6	



Station	Class	Adverse Closed	Random		Total	Comments
			Closed	Open		
WQ041.00	R			6	6	
WQ042.00	R			6	6	
WQ043.00	A			6	6	
WQ044.00	A			6	6	
WQ045.00	A			6	6	
WQ046.50	A			6	6	
WQ047.00	A			6	6	
WQ048.00	A			6	6	
WQ049.00	A	5		6	11	
WQ051.00	A			6	6	
WQ052.00	A			6	6	
WQ054.00	A			6	6	
WQ055.00	A			6	6	
WQ057.00	A			5	5	
WQ058.00	P		6		6	

Figure 2 shows the P90 trends over the past three years, for all stations classified as approved. During the transition from MPN to MF analysis method, the approved standard will decrease every year, until all samples have been analyzed by the MF method. In order to show the trend of the P90 value over the years, the calculated P90 scores are expressed as a percentage of the approved standard; any station showing the 2008 column on or above the 100 percent line does not meet the standard for approved classification. Most approved stations showed little change in water quality over the past 3 years (less than 10% increase or decrease). Notable changes were observed at station WQ 13, which showed an increase in scores (by approx. 15 percent) over the past three review years, and station WQ 52, which has shown an increase in its scores between 2007 and 2008. Additional shoreline survey activity may be necessary to further investigate the cause of the declining water quality at these sites. Station WQ 15 showed a significant decrease in scores (improvement in water quality) over the past three years. Figure 3 shows the P90 trends (open status only) over the past three years for the two conditionally approved stations in area WQ. Water quality at station WQ 31.5 has improved over the past three years. There have been no notable trends in water quality at station WQ 32.



Figure 2. Water Quality as Percent of Approved Standard, Approved Stations

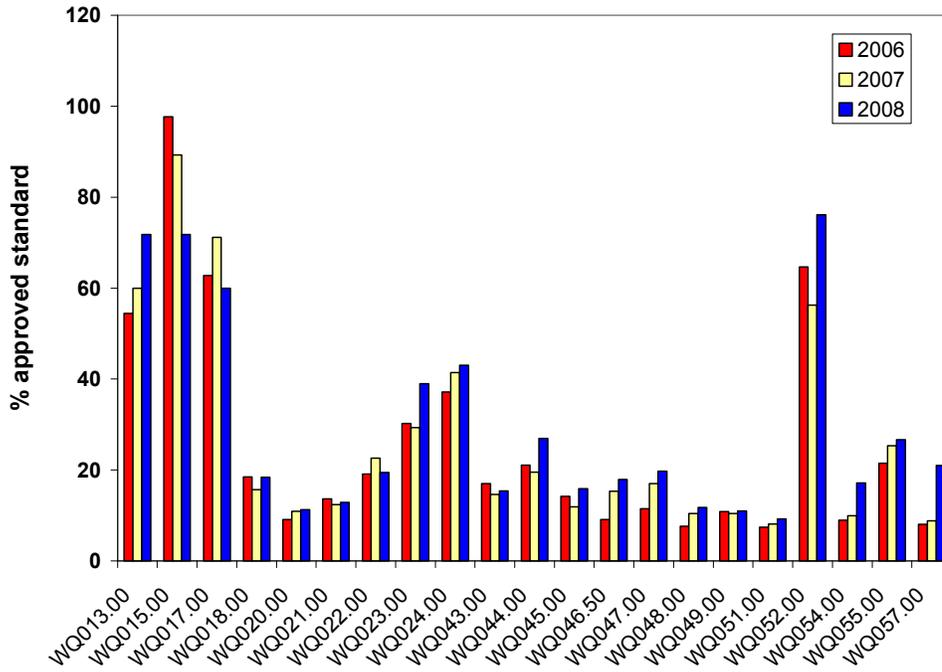
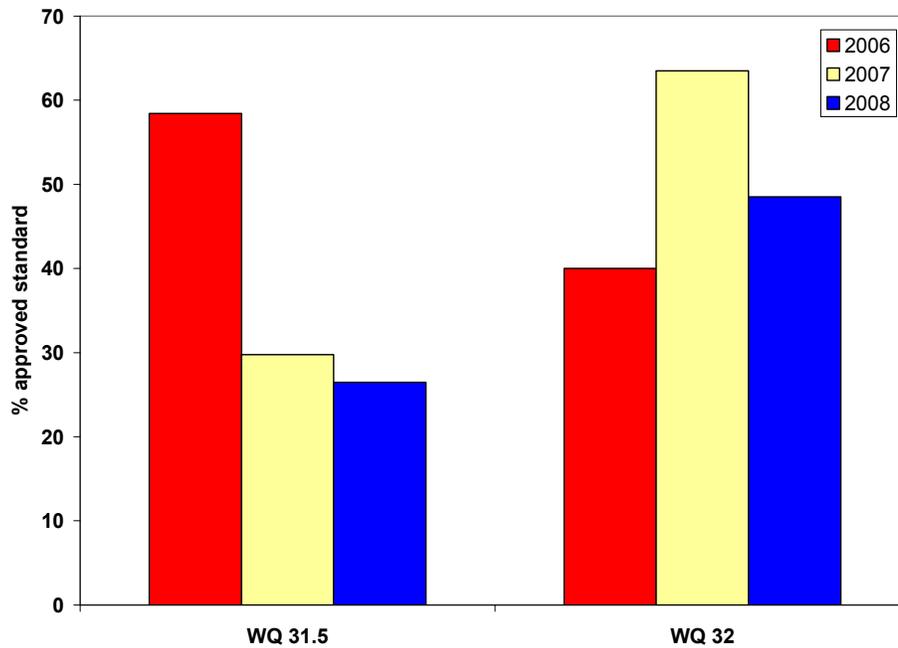


Figure 3. Water Quality as Percent of Approved Standard, Conditionally Approved Stations





Shoreline Survey Activity

Growing Area WQ has had no significant changes in pollution sources during the review period. Field observations were made during regularly scheduled random sampling runs, as well as during volunteer site certifications, new staff training runs, and flood sampling. A drive through survey, as well as a site visit to the Great Salt Bay STP, was conducted by DMR on August 19, 2008. A drive through survey of the lower Damariscotta River was completed in December 2008. No significant changes in the watershed development were noted during either drive through survey.

Aquaculture/Wet Storage Activity

Currently, there are 31 active aquaculture lease sites on the Damariscotta River. There are 6 wet storage sites on the Damariscotta River. A list of current aquaculture leases and wet storage permit holders can be accessed on the DMR website:

<http://www.maine.gov/dmr/aquaculture/leaseinventory/index.htm>

http://www.maine.gov/dmr/rm/public_health/wetstorage_bulktagging_permits.htm.

Classification Changes Required

No classification changes are required.

Summary

Water quality in growing area WQ continues to support the current classification under the NSSP. At most stations, P90 scores have remained steady over the past three review years. Two evident upward trends in fecal coliform scores have occurred, and follow up survey work should be completed in the area within the vicinity of these stations for the next triennial review. As a result of water quality review in this report, no classification changes are necessary at this time.



Appendix A. Annual Review of Conditional Area Management Plan

Damariscotta River Conditional Area C23-A Growing Area WQ

Scope

A portion of Growing Area WQ is conditionally approved, based on the proper functioning of the Great Salt Bay STP. The area shall be closed during any failure event at the Great Salt Bay STP (Mills Facility). Water quality at this conditional area is currently monitored by stations, WQ 31.5 and 32, and must be sampled monthly throughout their open status.

Compliance with management plan

There were no malfunctions at the Great Salt Bay STP in 2008.

Adequacy of reporting and cooperation of involved persons

In the event that a conditional area closure must be implemented, the management plan for this conditional area requires immediate reporting by the Great Salt Bay Sanitary District (treatment plant). To date, the cooperation between all involved parties was excellent. In 2008, no reports by the GSBSD were required.

Compliance with approved growing area criteria

The annual review of the water quality for all active stations in this conditional area met approved standards in the open status.

Table 1. Water quality report for conditionally approved stations in area WQ, Open Status

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WQ031.50	CA	30	23	3.4	0.34	23	9.0	34	188
WQ032.00	CA	30	23	4.8	0.42	43	16.5	34	188

Water sampling compliance history

In 2008, station WQ 31.5 was sampled 12 times (monthly); station WQ 32 was sampled a total of 12 times, however, a sample was not collected in the month of April. A collection was scheduled on April 28, 2008; however, the sample could not be collected due to access issues.

Analysis-Recommendations

No recommendations for changes to the current management plan or conditional area classification status are needed at this time.



Appendix B. Key to water quality table headers

Station = water quality monitoring station

Class = classification assigned to the station; prohibited (P), restricted (R), conditionally restricted (CR), conditionally approved (CA) and approved (A).

Count = the number of samples evaluated for classification, must be a minimum of 30.

MFCNT = the number of samples evaluated with the MTec method (included in the total Count column)

Geo_Mean = means the antilog (base 10) of the arithmetic mean of the sample result logarithm (base 10).

SDV = standard deviation

Max = maximum score of the 30 data points in the count column

P90 = 90th percentile

APPD_STD = the 90th percentile, at or below which the station would meet approved criteria in the absence of pollution sources or poisonous and deleterious substances.

RESTR_STD = the 90th percentile, at or below which the station would meet restricted criteria.



Appendix C. 2008 Water Quality Data

Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
WQ012.00	01/09/08	FP	F	5	31	R	T	C	P	<2.0	CL
	03/04/08	FP	F	-1	30	R	-	C	P	<2.0	CL
	05/06/08	RMO	E	9	29	R	-	C	P	<2.0	SW
	07/01/08	RMO	E	16	31	R	-	C	P	4	SW
	08/18/08	EMA	H	18	31	R	-	C	P	2	-
	10/14/08	RMO	HE	12	32	R	-	C	P	2	SW
WQ012.50	01/09/08	FP	F	5	28	R	T	C	P	27	S
	03/04/08	FP	F	-1	30	R	-	C	P	<2.0	S
	05/06/08	RMO	E	8	29	R	-	C	P	<2.0	SW
	07/01/08	RMO	E	15	30	R	-	C	P	<2.0	-
	08/18/08	EMA	H	18	31	R	-	C	P	2	-
	10/14/08	RMO	HE	12	30	R	-	C	P	<2.0	SW
WQ013.00	01/09/08	FP	F	6	23	R	T	O	A	18	S
	03/04/08	FP	F	-1	12	R	-	O	A	34	S
	05/06/08	RMO	E	11	24	R	-	O	A	<2.0	SW
	07/01/08	RMO	E	16	31	R	-	O	A	<2.0	-
	08/18/08	EMA	HF	19	31	R	-	O	A	<2.0	-
	10/14/08	RMO	H	12	30	R	-	O	A	<2.0	SW
WQ015.00	01/09/08	FP	F	3	24	R	T	O	A	42	S
	03/04/08	FP	HF	-1	28	R	-	O	A	<2.0	S
	05/06/08	RMO	E	10	26	R	-	O	A	<2.0	SW
	07/01/08	RMO	E	18	30	R	-	O	A	<2.0	-
	08/18/08	EMA	HF	21	30	R	-	O	A	11	-
	10/14/08	RMO	H	13	30	R	-	O	A	5.5	SW
WQ017.00	01/09/08	FP	F	4	23	R	T	O	A	6	S
	03/04/08	FP	HF	-1	28	R	-	O	A	5.5	SW
	05/06/08	RMO	HE	10	25	R	-	O	A	2	SW
	07/01/08	RMO	E	19	30	R	-	O	A	<2.0	-
	08/18/08	EMA	HF	20	30	R	-	O	A	<2.0	CL
	10/14/08	RMO	H	13	29	R	-	O	A	<2.0	SW
WQ018.00	01/09/08	FP	F	3	28	R	T	O	A	20	S
	03/04/08	FP	HF	-2	25	R	-	O	A	<2.0	S
	05/06/08	JRE	F	10	13	R	-	O	A	<2.0	CL
	07/15/08	LL	F	20	30	R	-	O	A	<2.0	CL
	08/18/08	MFI	H	20	30	R	-	O	A	<2.0	E
	10/29/08	FP	HF		30	R	-	O	A	2	W
WQ020.00	01/09/08	FP	F	4	25	R	T	O	A	<2.0	S
	03/04/08	FP	HF	-2	24	R	-	O	A	<2.0	S
	05/06/08	JRE	F	10	21	R	-	O	A	<2.0	CL
	07/15/08	LL	F	21	30	R	-	O	A	<2.0	CL
	08/18/08	MFI	H	20	30	R	-	O	A	<2.0	CL
	10/29/08	FP	HF	7	29	R	-	O	A	<2.0	W
WQ021.00	01/09/08	FP	F	4	28	R	T	O	A	8	S



Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
	03/04/08	FP	HF	-1	26	R	-	O	A	<2.0	SW
	05/06/08	JRE	F	10	23	R	-	O	A	<2.0	CL
	07/15/08	LL	F	19	30	R	-	O	A	<2.0	CL
	08/18/08	MFI	H	19.5	31	R	-	O	A	<2.0	E
	10/14/08	MFI	E	11	28	R	-	O	A	2	SW
WQ022.00	01/09/08	FP	F	3	22	R	T	O	A	4	S
	03/04/08	FP	H	-1	25	R	W	O	A	<2.0	SW
	05/06/08	JRE	F	10	15	R	-	O	A	<2.0	CL
	07/15/08	LL	F	23	30	R	-	O	A	2	CL
	08/18/08	MFI	H	21	30	R	-	O	A	<2.0	CL
	10/29/08	FP	HF	8	28	R	-	O	A	4	W
WQ023.00	03/04/08	FP	H	-2	24	R	-	O	A	<2.0	SW
	05/06/08	JRE	F	11	14	R	-	O	A	<2.0	CL
	05/27/08	EXT	F	19	25	R	-	O	A	2	W
	07/15/08	LL	HF	23	30	R	-	O	A	<2.0	CL
	08/18/08	MFI	H	21	29	R	-	O	A	2	CL
	10/14/08	MFI	E	11	28	R	-	O	A	38	SW
WQ024.00	01/09/08	FP	HF	4	19	R	T	O	A	8	S
	03/04/08	FP	H	-2	18	R	-	O	A	4	SW
	05/06/08	JRE	F	10	13	R	-	O	A	<2.0	CL
	07/15/08	LL	HF	23	28	R	-	O	A	2	CL
	08/18/08	MFI	H	22	28	R	-	O	A	<2.0	E
	10/14/08	MFI	E	11	25	R	-	O	A	4	SW
WQ031.50	01/08/08	EXT	F	-3	22	R	P	C	P	<2.0	CL
	02/06/08	FP	F	1	14	R	-	C	P	<2.0	CL
	03/04/08	EXT	F	1	18	R	-	C	P	<2.0	SW
	04/28/08	FP	L	12	28	R	-	C	P	<2.0	CL
	05/14/08	AB	H	12	22	R	-	C	P	<2.0	CL
	06/25/08	MLP	F	24	27	R	-	C	P	<2.0	N
	07/15/08	LL	HF	22	28	R	-	C	P	<2.0	CL
	08/18/08	MLP	F	22	28	R	-	C	P	6	SW
	09/16/08	AB	HF	22	26	R	-	C	P	2	SW
	10/07/08	EXT	F	13	14	R	-	C	P	18	CL
	11/05/08	MLP	F	10	17	R	-	C	P	<2.0	SW
	12/03/08	MLP	L	3	6	R	-	O	CA	<2.0	CL
WQ032.00	01/08/08	EXT	F	-2	22	R	P	O	CA	<2.0	CL
	02/06/08	FP	F	1	17	R	-	O	CA	<2.0	CL
	03/04/08	EXT	F	1	20	R	-	O	CA	<2.0	SW
	05/14/08	AB	H	11	22	R	-	O	CA	<2.0	CL
	05/28/08	EXT	LF	18	21	R	-	O	CA	<2.0	N
	06/25/08	MLP	F	21	27	R	-	O	CA	2	N
	07/15/08	LL	HF	23	29	R	-	O	CA	2	CL
	08/18/08	MLP	F	22	28	R	-	O	CA	4	SW
	09/16/08	AB	H	22	25	R	-	O	CA	8	SW
	10/07/08	EXT	F	14	19	R	-	O	CA	8	CL
	11/05/08	MLP	LF	8	18	R	-	O	CA	<2.0	SW



Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
	12/03/08	MLP	L	1	6	R	-	O	CA	4	CL
WQ034.00	01/08/08	EXT	F	-2	21	R	P	C	P	4	CL
	03/04/08	EXT	HF	1	18	R	-	C	P	6	SW
	04/28/08	FP	LF	10	25	R	-	C	P	<2.0	CL
	06/25/08	MLP	F	20	28	R	-	C	P	<2.0	CL
	08/18/08	MLP	F	22	28	R	-	C	P	4	SW
	10/07/08	EXT	F	14	18	R	-	C	P	4	NW
WQ035.00	01/08/08	EXT	F	-2	15	R	P	O	R	7.3	CL
	03/04/08	EXT	H	0	16	R	-	O	R	10	SW
	05/14/08	AB	HE	12	20	R	-	O	R	12	CL
	06/25/08	MLP	F	26	28	R	-	O	R	<2.0	CL
	08/18/08	MLP	F	22	28	R	-	O	R	2	SW
	10/07/08	EXT	F	14	19	R	-	O	R	<2.0	CL
WQ036.00	01/08/08	EXT	F	-3	10	R	P	O	R	52	CL
	03/04/08	EXT	H	0	14	R	W	O	R	10	SW
	05/14/08	AB	HE	11	20	R	-	O	R	<2.0	NW
	06/25/08	MLP	F	25	28	R	-	O	R	<2.0	CL
	08/18/08	MLP	F	22	28	R	-	O	R	6	CL
	10/07/08	EXT	F	15	15	R	-	O	R	7.3	NW
WQ037.00	01/08/08	EXT	F	-3	20	R	P	O	R	4	CL
	03/04/08	EXT	H	0	18	R	-	O	R	6	SW
	05/14/08	AB	HE	11	20	R	-	O	R	<2.0	NW
	06/25/08	MLP	F	21	28	R	-	O	R	2	NW
	08/18/08	MLP	F	22	28	R	-	O	R	4	CL
	10/07/08	EXT	F	14	18	R	-	O	R	4	NW
WQ039.00	01/08/08	EXT	HF	-2	25	R	P	C	P	<2.0	CL
	03/04/08	EXT	H	1	24	R	-	C	P	2	SW
	04/28/08	FP	LF	11	26	R	-	C	P	<2.0	CL
	06/25/08	MLP	F	20	29	R	-	C	P	<2.0	NW
	08/18/08	MLP	F	21	30	R	-	C	P	2	CL
	10/07/08	EXT	F	13	19	R	-	C	P	2	NW
WQ040.00	01/08/08	EXT	F	-2	24	R	P	O	R	<2.0	CL
	03/04/08	EXT	H	1	24	R	-	O	R	<2.0	SW
	05/14/08	AB	HE	10	24	R	-	O	R	<2.0	CL
	06/25/08	MLP	F	25	29	R	-	O	R	<2.0	CL
	08/18/08	MLP	F	23	30	R	-	O	R	<2.0	SW
	10/07/08	EXT	F	16	22	R	-	O	R	<2.0	CL
WQ041.00	01/08/08	EXT	F	-3	23	R	P	O	R	4	CL
	03/04/08	EXT	H	1	22	R	-	O	R	<2.0	SW
	05/14/08	AB	HE	10	24	R	-	O	R	<2.0	CL
	06/25/08	MLP	F	28	29	R	N	O	R	4	CL
	08/18/08	MLP	F	23	30	R	-	O	R	18	SW
	10/07/08	EXT	F	16	22	R	-	O	R	6	CL
WQ042.00	01/08/08	EXT	HF	-2	24	R	P	O	R	4	SE
	03/04/08	EXT	H	1	24	R	-	O	R	<2.0	S



Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
	04/28/08	FP	LF	11	28	R	-	O	R	<2.0	CL
	06/25/08	MLP	HF	18	30	R	-	O	R	<2.0	N
	08/18/08	MLP	F	21	30	R	-	O	R	<2.0	SW
	10/07/08	EXT	F	15	22	R	-	O	R	<2.0	NW
WQ043.00	01/09/08	FP	HF	4	24	R	T	O	A	2	S
	03/04/08	FP	H	-1	24	R	-	O	A	<2.0	SW
	05/06/08	JRE	F	11	22	R	-	O	A	<2.0	CL
	07/15/08	LL	HF	22	30	R	-	O	A	<2.0	W
	08/18/08	MFI	HE	21	31	R	-	O	A	<2.0	E
	10/29/08	FP	F	6	28	R	-	O	A	<2.0	W
WQ044.00	01/09/08	FP	HF	3	24	R	T	O	A	2	S
	03/04/08	FP	HE	-3	20	R	-	O	A	40	CL
	05/06/08	JRE	F	10	22	R	-	O	A	<2.0	CL
	07/15/08	LL	HF	20	30	R	-	O	A	<2.0	W
	08/18/08	MFI	HE	22	30	R	-	O	A	<2.0	CL
	10/14/08	MFI	LE	11	28	R	-	O	A	6	SW
WQ045.00	01/09/08	FP	HF	3	28	R	T	O	A	2	S
	03/04/08	FP	HE	-1	26	R	-	O	A	<2.0	CL
	05/06/08	JRE	F	10	22	R	-	O	A	<2.0	CL
	07/15/08	LL	H	19	30	R	-	O	A	22	W
	08/18/08	MFI	H	20	31	R	-	O	A	<2.0	E
	10/29/08	FP	F	5	29	R	-	O	A	<2.0	W
WQ046.50	01/09/08	FP	H	3	25	R	T	O	A	10	S
	03/04/08	FP	HE	-1	28	R	-	O	A	2	CL
	05/06/08	JRE	F	9	26	R	-	O	A	<2.0	CL
	07/15/08	LL	H	19	30	R	-	O	A	<2.0	W
	08/18/08	MFI	H	18	31	R	-	O	A	<2.0	CL
	10/14/08	MFI	LE	10	30	R	-	O	A	2	SW
WQ047.00	01/09/08	FP	H	4	27	R	T	O	A	10	S
	03/04/08	FP	E	0	28	R	-	O	A	<2.0	CL
	05/06/08	JRE	F	9	24	R	-	O	A	<2.0	CL
	07/15/08	LL	H	20	30	R	-	O	A	<2.0	W
	08/18/08	MFI	H	18	31	R	-	O	A	<2.0	E
	10/14/08	MFI	LE	11	30	R	-	O	A	<2.0	SW
WQ048.00	05/06/08	RMO	HE	10	27	R	-	O	A	<2.0	SW
	05/27/08	EXT	F	12	28	R	-	O	A	<2.0	W
	07/01/08	RMO	E	17	31	R	-	O	A	6	-
	07/15/08	LL	H	18	30	R	-	O	A	<2.0	W
	08/18/08	EMA	HF	19	30	R	-	O	A	2	-
	10/14/08	RMO	H	13	30	R	-	O	A	<2.0	SW
WQ049.00	01/09/08	FP	H	4	30	R	T	O	A	2	S
	03/04/08	FP	E	-1	30	R	-	O	A	<2.0	SW
	05/06/08	RMO	HE	9	28	R	-	O	A	<2.0	SW
	07/01/08	RMO	HE	16	31	R	-	O	A	<2.0	-
	08/18/08	EMA	HF	19	31	R	-	O	A	<2.0	-



Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
	10/14/08	RMO	H	13	30	R	-	O	A	<2.0	SW
WQ051.00	01/09/08	FP	HE	4	30	R	T	O	A	4	S
	03/04/08	FP	E	-1	30	R	-	O	A	<2.0	SW
	05/06/08	RMO	HE	9	28	R	-	O	A	<2.0	SW
	07/01/08	RMO	H	17	31	R	-	O	A	4	-
	08/18/08	EMA	F	19	31	R	-	O	A	<2.0	-
	10/14/08	RMO	HF	12	30	R	-	O	A	<2.0	SW
WQ052.00	01/09/08	FP	HE	3	12	R	T	O	A	5.5	S
	03/04/08	FP	E	-1	20	R	-	O	A	<2.0	CL
	05/06/08	RMO	HE	11	16	R	N	O	A	2	SW
	07/01/08	RMO	H	18	23	R	-	O	A	56	-
	08/18/08	EMA	F	20	26	R	-	O	A	6	-
	10/14/08	RMO	HF	12	28	R	N	O	A	<2.0	SW
WQ054.00	01/09/08	FP	HE	5	29	R	T	O	A	55	S
	03/04/08	FP	E	-1	28	R	-	O	A	<2.0	W
	05/06/08	RMO	HE	9	28	R	-	O	A	<2.0	SW
	07/01/08	RMO	H	17	32	R	-	O	A	8	-
	08/18/08	EMA	F	19	31	R	-	O	A	<2.0	-
	10/14/08	RMO	HF	13	30	R	-	O	A	<2.0	SW
WQ055.00	01/09/08	FP	HE	3	6	R	T	O	A	4	CL
	03/04/08	FP	E	0	30	R	-	O	A	<2.0	CL
	05/06/08	RMO	H	10	28	R	-	O	A	<2.0	SW
	07/01/08	RMO	H	17	32	R	-	O	A	<2.0	-
	08/18/08	EMA	F	18	31	R	-	O	A	<2.0	-
	10/14/08	RMO	HF	14	30	R	-	O	A	<2.0	SW
WQ057.00	01/09/08	FP	HE	4	32	R	TP	O	A	4	S
	05/06/08	RMO	H	8	29	R	-	O	A	<2.0	SW
	07/01/08	RMO	HF	15	30	R	-	O	A	160	-
	08/18/08	EMA	F	16	31	R	-	O	A	<2.0	-
	10/14/08	RMO	F	12	31	R	W	O	A	<2.0	SW
WQ058.00	01/09/08	FP	HE	3	32	R	TP	C	P	<2.0	S
	03/04/08	FP	E	0	30	R	-	C	P	<2.0	SW
	05/06/08	RMO	H	8	28	R	-	C	P	<2.0	SW
	07/01/08	RMO	HF	13	30	R	-	C	P	<2.0	-
	08/18/08	EMA	F	16	32	R	-	C	P	2	-
	10/14/08	RMO	F	14	32	R	-	C	P	<2.0	SW